

**REMARKS**

Claims 1 and 3-31 remain in the present application. Claims 17-31 have been withdrawn from consideration. Claims 1 and 3-16 are rejected. Claim 5 is amended and no claims have been cancelled or added. Claims 1 and 17 are the independent claims.

**Entry of Amendment after Final**

Entry of this Amendment After Final is requested in that none of the amendments made herein raise new issues requiring further consideration and/or search, but instead only correct a minor antecedent basis error (claim 5).

**Rejection Under 35 U.S.C. §112, second paragraph**

Claim 5 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Application regards as the invention.

Applicants have amended claim 5 to be dependent on claim 3. Applicants, therefore, respectfully request that the rejection to Claim 5 under 35 U.S.C. § 112, second paragraph, be withdrawn.

**Example Embodiments of the Present Application**

Independent claim 1 recites a polishing pad comprising “a polishing layer composed of a hydrophilic polymeric matrix and liquid non-water soluble microelements embedded in the polymeric matrix, wherein open pores defined by the embedded liquid microelements are distributed across a surface of the polishing layer”. Non-limiting example embodiments of these features can be found throughout the specification, for example, paragraph [0048] and FIG. 2 of the instant specification.

In FIG. 2, the plurality of pores 140' arranged on the polishing layer surface 160 and the embedded liquid microelements 140 are provided in order to increase polishing uniformity by enabling a polishing slurry to be smoothly collected and supplied. Accordingly, the pores 140' arranged on the polishing layer surface 160 and the embedded liquid microelements 140 are uniformly distributed in the hydrophilic polymeric matrix 190. The embedded liquid microelements 140 are formed using a liquid material, which is incompatible with the hydrophilic polymeric matrix 190.

In addition, liquid and hollow polymeric microelements may be used simultaneously to attempt various changes in CMP performance. In other words, when the hollow polymeric microelements are used, the sizes of pores cannot be adjusted, whereas, when the liquid is used, the sizes and densities of open pores formed on the surface of the polishing layer can be adjusted so that, when the liquid and the hollow polymeric microelements are used simultaneously, they can be applied to CMP for a variety of purposes and the performance of CMP can also be adjusted by various methods.

#### **Rejections Under 35 U.S.C. §103(a)**

##### *Molnar in view of James*

Claims 1, 3-6 and 9-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al (U.S. Patent No. 6,267,644) further in view of James et al. (U.S. Patent No. 6,069,080). Applicants respectfully traverse for the reasons detailed below.

The outstanding Office Action on page 3, line 17, acknowledges that Molnar fails to disclose the “hydrophilic polymeric matrix” and relies on the teachings of James for this feature of claim 1.

In addition to the above-identified deficiency of Molnar, Applicants respectfully submit that Molnar teaches away from the polishing pad recited in claim 1. More

specifically, Molnar states “a lubricating aid which is water soluble is preferred...a water based lubricant formed with water which has low sodium content is also preferred.”<sup>1</sup> The Examiner alleges that column 24, lines 30-32 of Molnar discloses that the lubricating aid is composed of silicon oils, aromatic mineral oils, etc., similar to the liquid microelements of claim 1. Applicants respectfully disagree. Column 24, lines 25-26 of Molnar clearly states that the different types of liquid lubricants may be used in a preferred effective lubricating aid additive, and not the lubricating aid itself. Accordingly, Applicants respectfully submit that an essential feature of the polishing pad of Molnar is that the finishing aid be a water soluble lubricating aid. Therefore, Applicants respectfully submit that Molnar teaches away from the “liquid non-water soluble microelements embedded in the polymeric matrix” of claim 1.

In addition, because the liquid used in Molnar is water soluble, i.e., hydrophilic, the liquid melts in the hydrophilic matrix, and therefore, is not dispersed when applied to the polishing pad of claim 1. Thus, pores cannot be formed on the surface of the pad. Therefore, Applicants respectfully submit that Molnar does not teach or suggest “wherein open pores defined by the embedded liquid microelements are distributed across a surface of the polishing layer” as recited in claim 1.

With respect to the proposed combination of Molnar and James, Applicants respectfully submit that the combination is improper for at least the following reasons.

There are three possible sources for a motivation to combine references: (1) the nature of the problem to be solved, (2) the teachings of the prior art, and (3) the knowledge of persons of ordinary skill in the art. In the present Office Action, the Examiner alleges that the motivation to combine the teachings of Molnar and James is to “provide a polishing pad that is more readily wet and therefore sufficiently hydrophilic.”

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<sup>1</sup> Molnar, column 17, lines 9-11 and 15-17.

However, the Examiner is using impermissible hindsight reconstruction to reject the claims. The Federal Circuit has noted that the PTO and the courts “cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention,” and the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. The Examiner has used the present application as a blueprint, selected a prior art polishing pad, and then searched other prior art for the missing elements, i.e., a hydrophilic polymeric matrix. Applicants respectfully submit that an attempt to bring in the isolated teachings of the hydrophilic polymeric matrix of James into the polishing pad of Molnar would amount to improperly picking and choosing from the different references without regard for the teachings of the references as a whole.<sup>2</sup> Applicants maintain, therefore, that the Action does not present the required “convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references,” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

In addition, Applicants respectfully submit that the Examiner has not provided any evidence of a motivation for combining these two references in order to render obvious a hydrophilic polymeric matrix as is recited in independent claim 1.

Applicants submit that alleging that one skilled in the art would have been motivated to make the proposed combination of references without providing any evidence of the justification for doing so, e.g., Molnar and James, would effectively remove any need for some technical or logical motivation absent guidance provided by the present Specification for making the combination. See MPEP § 2143.01; citing *in re Mills*, 916 F.2d 680, 16

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<sup>2</sup> See *In re Ehrreich* 590 F2d 902, 200 USPQ 504 (CCPA, 1979) (stating that patentability must be addressed “in terms of what would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the sum of all the relevant teachings in the art, not in view of first one and then another of the isolated teachings in the art,” and that one “must consider the entirety of the disclosure made by the references, and avoid combining them indiscriminately.”)

USPQ2d 1430 (Fed. Cir. 1990) (the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination).

Applicants submit, therefore, that absent any evidence of motivation to justify a combination renders obvious every combination! Applicants maintain that such reasoning may be improperly used to bypass the conventional technical obviousness analysis, particularly when neither the references nor the knowledge in the art may fairly be said to have motivated such a combination as in the present application.

Because this circular “reasoning” can be applied to most, if not all, combination claims, relying on the Examiner’s proposed combination for the initial motivation to make the combination produces an “analysis” that is incapable of distinguishing between obvious and non-obvious inventions. Applicants maintain that the absence of any evidence of motivation to attempt the claimed combination simply does not constitute the legitimate objective evidence of a teaching or suggestion in the prior art or general knowledge in the art necessary to maintain a proper obviousness rejection.

Accordingly, unless and until the Examiner provides objective evidence and/or makes specific factual findings with respect to the motivation to combine references, *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002), applicants maintain that any proposed combination remains improper and should be withdrawn.

For all of the above reasons, Applicants respectfully request that the rejection to Claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Claims 3-6 and 9-16, dependent on independent claim 1, are patentable for the reasons stated above with respect to claim 1 as well as for their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection to independent claim 1 and all claims dependent thereon.

*Molnar and James in view of Merchant*

Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al (U.S. Patent No. 6,267,644) in view of James et al. (U.S. Patent No. 6,069,080) as applied to claim 1, in view of Merchant et al. (U.S. Patent No 6,364,744). Applicants respectfully traverse for the reasons detailed below.

Applicants incorporate the discussion of Molnar in view of James above, and maintain that Molnar and James do not teach or suggest liquid non-water soluble microelements embedded in a polymeric matrix, wherein open pores defined by the embedded liquid microelements are distributed across a surface of the polishing layer as recited in independent claim 1. Even assuming *arguendo* that Merchant could be combined with Molnar and James (which Applicants do not admit), the Examiner has failed to show how Merchant remedies the deficiencies of Molnar and James with respect to claim 1. Claim 7, dependent on independent claim 1, is patentable for the reasons stated above with respect to claim 1 as well as for its own merits.

The Applicants, therefore, respectfully request that the rejection to Claim 7 under 35 U.S.C. § 103(a) be withdrawn.

*Molnar and James in view of Reinhardt*

Claims 8 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al (U.S. Patent No. 6,267,644) in view of James et al. (U.S. Patent No. 6,069,080) as applied to claim 1, in view of Reinhardt et al. (U.S. Patent No 5,578,362). Applicants respectfully traverse for the reasons detailed below.

Applicants incorporate the discussion of Molnar in view of James above, and maintain that Molnar and James do not teach or suggest liquid non-water soluble microelements embedded in a polymeric matrix, wherein open pores defined by the embedded liquid microelements are distributed across a surface of the polishing layer as recited in independent claim 1. Even assuming *arguendo* that Reinhardt could be combined with Molnar and James (which Applicants do not admit), the Examiner has failed to show how Reinhardt remedies the deficiencies of Molnar and James with respect to claim 1. Claims 8 and 15, dependent on independent claim 1, are patentable for the reasons stated above with respect to claim 1 as well as for their own merits.

The Applicants, therefore, respectfully request that the rejection to Claims 8 and 15 under 35 U.S.C. § 103(a) be withdrawn.

Molnar and James in view of Bruxvoort

Claims 11 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al (U.S. Patent No. 6,267,644) in view of James et al. (U.S. Patent No. 6,069,080) as applied to claim 1, in view of Bruxvoort et al. (U.S. Patent No 5,958,794). Applicants respectfully traverse for the reasons detailed below.

Applicants incorporate the discussion of Molnar in view of James above, and maintain that Molnar and James do not teach or suggest liquid non-water soluble microelements embedded in a polymeric matrix, wherein open pores defined by the embedded liquid microelements are distributed across a surface of the polishing layer as recited in independent claim 1. Even assuming *arguendo* that Bruxvoort could be combined with Molnar and James (which Applicants do not admit), the Examiner has failed to show how Bruxvoort remedies the deficiencies of Molnar and James with respect to claim 1. Claims 11 and 14, dependent on independent claim 1, are patentable for the reasons stated above with respect to claim 1 as well as for their own merits.

The Applicants, therefore, respectfully request that the rejection to Claims 11 and 14 under 35 U.S.C. § 103(a) be withdrawn.

**CONCLUSION**

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1 and 3-16 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Erin G. Hoffman, Reg. No. 57,752, at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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